DEFENSE INFORMATION SYSTEMS AGENCY
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IN REPLY REFER TO: Joint Interoperability Test Command (JTE) **1 May 12**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of Vidyo Video Conferencing System with Software Version 2.1.1.11_D with Codian Media Service Engine (MSE) 8321 Integrated Services Digital Network (ISDN) Gateway version 2.1(1.43)P

References: (a) DoD Directive 4630.05, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01E, "Interoperability and Supportability of Information Technology and National Security Systems," 15 December 2008
(c) through (f), see Enclosure 1

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification.

2. The Vidyo Video Conferencing System with Software Version 2.1.1.11_D with Codian MSE 8321 ISDN Gateway version 2.1(1.43)P is hereinafter referred to as the System Under Test (SUT). The SUT meets all of its critical interface and functional interoperability requirements and is certified for joint use within the Defense Information System Network (DISN) as a Video Teleconferencing (VTC) system. The SUT met the conditional requirements for an Internet Protocol (IP) interface with the International Telecommunication Union – Telecommunication Standardization Sector (ITU-T) H.323 protocol; however, Assured Service is not yet defined for an IP interface with ITU-T H.323 protocol. Therefore, Command and Control (C2) VTC users and Special C2 VTC users are not authorized to be served by an IP interface with the ITU-T H.323 protocol.

The SUT is IP only and requires the use of an ITU-T H.323 to ITU-T H.320 gateway solution as a required subcomponent in order to connect to the DISN. In testing, JITC found minimal risk in certifying this with any ITU-T H.323 to ITU-T H.320 gateways that are certified and on the Unified Capabilities (UC) Approved Product List (APL) as a component to other certified VTC systems. The SUT meets the critical interoperability requirements set forth in Reference (c) using test procedures derived from Reference (d). No other configurations, features, or functions, except those cited within this report, are certified by the JITC. This certification expires upon changes that could affect interoperability, but no later than three years from the date the DISA Certifying Authority (CA) provided a positive Recommendation.

3. This finding is based on interoperability testing conducted by JITC, review of the vendor's Letters of Compliance (LoC), DISA adjudication of open test discrepancy reports (TDRs), and DISA CA Recommendation. Interoperability testing was conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca, Arizona, from 20 June through 29 July 2011 to test the SUT with software release 2.1.0.15_D. The Verification and Validation testing was conducted from 19 through 23 December 2011 to test the SUT with Software Release 2.1.1.11_D which included IPv6 capability and some IA fixes. Review of the vendor's LoC was completed on 27 September 2011. DISA adjudication of outstanding TDRs was completed on 18 March 2012 and included a lessened requirement from Reference (e). The DISA CA provided a positive recommendation on 25 April 2012 based on the security testing completed by DISA-led IA test teams and published in a separate report, Reference (f). The Certification Testing Summary (Enclosure 2) documents the test results and describes the test configuration.

4. The SUT tested VTC systems are depicted in Table 1. The Functional Requirements (FR) used to evaluate the interoperability of the SUT, certified interfaces and the interoperability statuses are indicated in Table 2.

Table 1. SUT VTC Systems

	Tested VTC System	Supported Interfaces
SUT[1,2] Version 2.1.1.11_D	Vidyo Room Systems HD050, HD100, HD220 with Software Version 2.1.0.319_D	IP (10/100/1000 Mbps with ITU-T H.323 protocol)
	Vidyo Desktop Software With Software Version 2.1.0.332_D	IP (10/100 Mbps with ITU-T H.323 protocol)
	Vidyo Portal and Vidyo Router With Software Version 2.1.1.11_D	IP (10/100 Mbps with ITU-T H.323 protocol)
	Vidyo Gateway With Software Version 2.1.1.10_D	IP (10/100 Mbps with ITU-T H.323 protocol)
	Codian MSE 8321 ISDN Gateway Software Version 2.1(1.43)P	IP (10/100 Mbps with ITU-T H.323 protocol), ISDN PRI T1

NOTES:
1. The SUT is IP only and requires the use of an ITU-T H.323 to ITU-T H.320 gateway solution as a required subcomponent in order to connect to the DISN. In testing, JITC has found minimal risk in certifying this with any ITU-T H.323 to ITU-T H.320 gateway certified and on the UC APL as a component to other certified VTC systems.
2. The SUT met the conditional requirements for an IP interface with the ITU-T H.323 protocol; however, Assured Service is not yet defined for an IP interface with ITU-T H.323 protocol. Therefore, C2 VTC users and Special C2 VTC users are not authorized to be served by an IP interface with the ITU-T H.323 protocol.

LEGEND:

APL	Approved Products List	JITC	Joint Interoperability Test Command
C2	Command and Control	Mbps	Megabits per second
DISN	Defense Information System Network	MSE	Media Service Engine
H.320	Standard for narrowband VTC	PRI	Primary Rate Interface
H.323	Standard for multi-media communications on packet-based networks	SUT	System Under Test
		T1	Digital Transmission Link Level 1 (1.544 Mbps)
HD	High Definition	UC	Unified Capabilities
IP	Internet Protocol	VTC	Video Teleconferencing
ISDN	Integrated Services Digital Network		
ITU-T	International Telecommunication Union - Telecommunication Standardization Sector		

Table 2. SUT FRs and Interoperability Status

Interface	Critical	Certified	Requirements Required or Conditional	Status	UCR Reference
IP (10/100/1000 Mbps) ITU-T H.323	No[1]	Yes[2]	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002. (R)	Met	5.2.4.2
			ITU-T H.323 in accordance with FTR 1080B-2002. (C)	Met[3]	5.2.4.2
			Layer 3 Differential Service Code Point tagging as specified in the UCR, Section 5.3.1. (C)	Not Met[4]	5.2.4.2
			A loss of any conferee on a multipoint videoconference shall not terminate or degrade the DSN service supporting VTC connections of any of the other conferees on the videoconference. (R)	Met	5.2.4.2
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with the UCR, Section 5.2.3. (C)	Met	5.2.4.2
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations. (R)	Met	5.2.4.2
			VTC IP interface must be IPv6 capable and meet the Simple Server/Network Appliance IPv6 profile (R)	Partially Met[5]	5.3.5
ISDN PRI T1	No[1]	Yes	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002. (R)	Met[3]	5.2.4.2
			A loss of any conferee on a multipoint videoconference shall not terminate or degrade the DSN service supporting VTC connections of any of the other conferees on the videoconference. (R)	Met	5.2.4.2
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with the UCR, Section 5.2.3. (C)	Met	5.2.4.2
			Integrated PRI interface shall be in conformance with IAS requirements in the UCR, Section 5.2.6. (C)	Met	5.2.4.2
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations. (R)	Met	5.2.4.2
Security	Yes	Yes	GR-815 and STIGs (R)	Met[6]	4.3.1 and 5.4.6.1

NOTES:
1. The SUT is IP only and requires the use of an ITU-T H.323 to ITU-T H.320 gateway solution as a required subcomponent in order to connect to the DISN. In testing, JITC has found minimal risk in certifying this with any ITU-T H.323 to ITU-T H.320 gateways certified and on the UC APL as a component to other certified VTC systems.
2. The SUT met the conditional requirements for an IP interface with the ITU-T H.323 protocol; however, Assured Service is not yet defined for an IP interface with ITU-T H.323 protocol. Therefore, C2 VTC users and Special C2 VTC users are not authorized to be served by an IP interface with the ITU-T H.323 protocol.
3. All requirements are derived from UCR 2008, Change 1, Reference (c). The SUT does not support a sub-requirement inside FTR-1080B-2002. This sub-requirement was changed to conditional in UCR 2008, Change 3, Reference (e). DISA stated that effective immediately, this is no longer applicable to the SUT.
4. The SUT does not support DSCP tagging for IPv4 to IPv6 traffic. All traffic is tagged at 0 (Best Effort). DISA adjudicated this discrepancy as minor with the vendor's POA&M to fix with release 2.1.2D by 13 August 2012. Additionally, DISA stipulated that this discrepancy must be fixed and verified by the POA&M date or it will be pulled off the UC APL.
5. The SUT does not support Dual Stack IPv6. The SUT can be configured for IPv4 or IPv6. DISA adjudicated this discrepancy as minor with the vendor's POA&M to fix with release 2.1.2D by 13 August 2012.
6. Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (f).

Table 2. SUT FRs and Interoperability Status (continued)

LEGEND:

APL	Approved Products List	IPv4	Internet Protocol version 4
C	Conditional	IPv6	Internet Protocol version 6
C2	Command and Control	ISDN	Integrated Services Digital Network
DISA	Defense Information Systems Agency	ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
DISN	Defense Information System Network		
DSCP	Differentiated Services Code Point	JITC	Joint Interoperability Test Command
DSN	Defense Switched Network	Mbps	Megabits per seconds
FRs	Functional Requirements	PRI	Primary Rate Interface
FTR	Federal Telecommunications Recommendation	POA&M	Plan of Action and Milestones
GR	Generic Requirement	R	Required
GR-815	Generic Requirements For Network Element/Network System (NE/NS) Security	STIGs	Security Technical Implementation Guides
		SUT	System Under Test
H.320	Standard for narrowband VTC	T1	Digital Transmission Link Level 1 (1.544 Mbps)
H.323	Standard for multi-media communications on packet-based networks	UC	Unified Capabilities
		UCR	Unified Capabilities Requirements
IAS	Integrated Access Switch	VTC	Video Teleconferencing
IP	Internet Protocol		

5. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at https://stp.fhu.disa.mil. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at http://jit.fhu.disa.mil (NIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi. Due to the sensitivity of the information, the Information Assurance Accreditation Package (IAAP) that contains the approved configuration and deployment guide must be requested directly through government civilian or uniformed military personnel from the Unified Capabilities Certification Office (UCCO), e-mail: ucco@disa.mil.

6. The JITC point of contact is Mr. Steven Lesneski, DSN 879-5400, commercial (520) 538-5400, FAX DSN 879-4347, or e-mail to steven.lesneski@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 1034101.

FOR THE COMMANDER:

2 Enclosures a/s

for RICHARD A. MEADOR
Chief
Battlespace Communications Portfolio

JITC Memo, JTE, Vidyo Video Conferencing System with Software Version 2.1.1.11_D with Codian Media Service Engine (MSE) 8321 Integrated Services Digital Network (ISDN) Gateway version 2.1(1.43)P

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Defense Information Systems Agency, GS23

ADDITIONAL REFERENCES

(c) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008, Change 1," 22 January 2010
(d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006
(e) Office of the Assistant Secretary of Defense, "Department of Defense Unified Capabilities Requirements 2008 Change 3," 11 September 2011
(f) Joint Interoperability Test Command, "Information Assurance (IA) Assessment of Vidyo Conferencing System Release (Rel.) 2.1.1.11D (Tracking Number 1034101)," Draft

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. Vidyo Video Conferencing System with Software Version 2.1.1.11_D with Codian Media Service Engine (MSE) 8321 Integrated Services Digital Network (ISDN) Gateway version 2.1(1.43)P; hereinafter referred to as the System Under Test (SUT).

2. SPONSOR. Defense Information Systems Agency (DISA) Network Services (NS-24).

3. SYSTEM POC. MAJ Richard Abelkis, NS24 Video Chief Technology Officer, DISA, P.O. Box 549, Fort Meade, Maryland, 20755-0549, Email: richard.abelkis@disa.mil

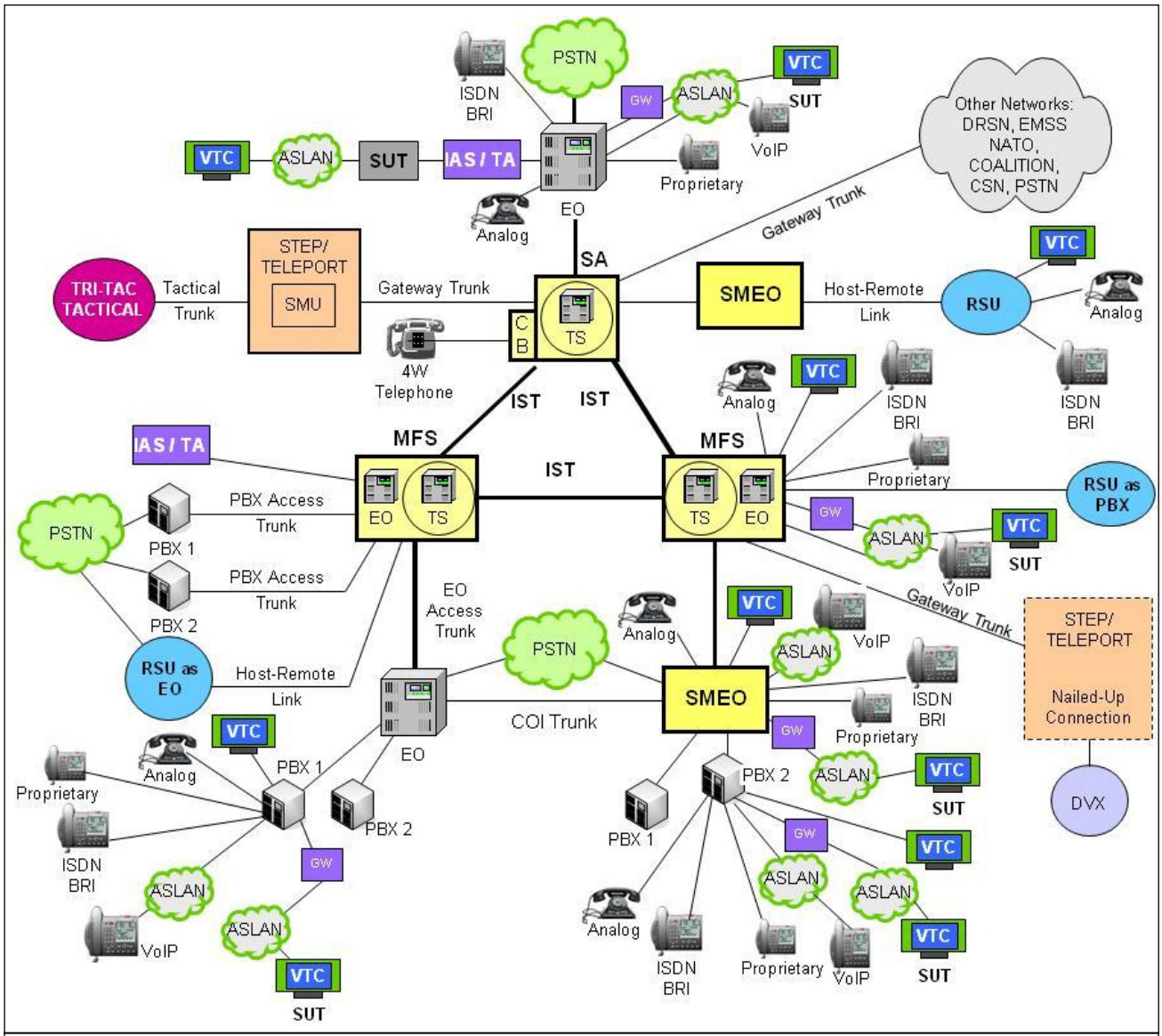
4. TESTER. Joint Interoperability Test Command (JITC), Fort Huachuca, Arizona.

5. SYSTEM UNDER TEST DESCRIPTION. The SUT is a family of Video Teleconferencing (VTC) systems using Vidyo's patented technologies to leverage the new International Telecommunication Union – Telecommunication Standardization Sector (ITU-T) H.264 Scalable Video Coding (SVC) standard to deliver High Definition (HD)-quality video conferencing over the Internet Protocol (IP) networks. The SUT includes the Vidyo HD-family of HD050, HD100, and HD220 Room Systems, Vidyo Desktop Software, Vidyo Router, Vidyo Portal, and Vidyo Gateway with the Codian MSE 8321 ISDN Gateway as a required subcomponent. The SUT includes a desktop or laptop software version designed for personal VTC. The HD050, HD100, and HD220 are the three room system models and they are designed for medium and large-sized videoconferencing rooms. The Vidyo Portal allows endpoint registration. The Vidyo Router allows for multipoint conferences and conference control. The Vidyo Gateway allows the SUT endpoints to communicate with legacy (ITU-T H.264 and ITU-T H.263) endpoints. The SUT is able to connect to ITU-T H.320 endpoints with the use of the Codian MSE 8321 ISDN Gateway. The SUT is IP only and requires the use of an ITU-T H.323 to ITU-T H.320 gateway solution as a required subcomponent in order to connect to the Defense Information System Network (DISN). In testing, JITC found minimal risk in certifying this with any ITU-T H.323 to ITU-T H.320 gateways that are certified and on the Unified Capabilities (UC) Approved Product List (APL) as a component to other certified VTC systems. The SUT offers up to 1920 x 1080 (1080p) resolution video. The SUT supports the following features which were met through testing or vendor submission of Letters of Compliance (LoC) unless otherwise noted:

- ITU-T H.323 IP
- Digital Transmission Link Level 1 (T1)
- ISDN Primary Rate Interface (PRI) with the use of an approved ISDN to ITU-T H.323 Gateway
- Network Interfaces: 10/100/1000 auto Network Interface Card (NIC)
- Supports ITU-T H.323 up to 6 Megabits per second (Mbps) point-to-point
- SUT is either IPv4 or IPv6, not IPv4 and IPv6 dual stack at this time.
- Audio standards: ITU-T G.711, ITU-T G.722

- Video standards: ITU-T H.263, ITU-T H.263+, ITU-T H.264, ITU-T H.239
- Up to two monitors, wireless remote control, camera, microphone
- Microphones provide a 360-degree range, mute button
- Echo Cancellation, Automatic Gain Control, Automatic Noise Suppression
- Video formats supported: National Television Standards Committee, Phase Alternate Line, Video Graphics Array, Super Video Graphics Array, Extended Graphics Array

6. OPERATIONAL ARCHITECTURE. The Unified Capabilities Requirements (UCR) DISN architecture in Figure 2-1 depicts the relationship of the SUT to the DSN switches.



LEGEND:

4W	4-Wire
ASLAN	Assured Services Local Area Network
BRI	Basic Rate Interface
CB	Channel Bank
COI	Community of Interest
CSN	Canadian Switch Network
DISN	Defense Information System Network
DRSN	Defense Red Switch Network
DVX	Deployable Voice Exchange
EMSS	Enhanced Mobile Satellite System
EO	End Office
IAS	Integrated Access Switch
ISDN	Integrated Services Digital Network
IST	Interswitch Trunk
MFS	Multifunction Switch
NATO	North Atlantic Treaty Organization
PBX	Private Branch Exchange
PBX 1	Private Branch Exchange 1
PBX 2	Private Branch Exchange 2
PSTN	Public Switched Telephone Network
RSU	Remote Switching Unit
SA	Standalone
SMEO	Small End Office
SMU	Switched Multiplex Unit
STEP	Standardized Tactical Entry Point
SUT	System Under Test
TA	Terminal Adapter
Tri-Tac	Tri-Service Tactical Communications Program
TS	Tandem Switch
VoIP	Voice over Internet Protocol
VTC	Video Teleconferencing

Figure 2-1. DISN Architecture

7. REQUIRED SYSTEM INTERFACES. Requirements specific to the SUT and interoperability results are listed in Table 2-1. These requirements are derived from UCR Interface and Functional Requirements (FR) and verified through JITC testing and review of vendor's LoC.

Table 2-1. SUT FRs and Interoperability Status

Interface	Critical	Certified	Requirements Required or Conditional	Status	UCR Reference
IP (10/100/1000 Mbps) ITU-T H.323	No[1]	Yes[2]	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002. (R)	Met	5.2.4.2
			ITU-T H.323 in accordance with FTR 1080B-2002. (C)	Met[3]	5.2.4.2
			Layer 3 Differential Service Code Point tagging as specified in the UCR, Section 5.3.1. (C)	Not Met[4]	5.2.4.2
			A loss of any conferee on a multipoint videoconference shall not terminate or degrade the DSN service supporting VTC connections of any of the other conferees on the videoconference. (R)	Met	5.2.4.2
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with the UCR, Section 5.2.3. (C)	Met	5.2.4.2
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations. (R)	Met	5.2.4.2
			VTC IP interface must be IPv6 capable and meet the Simple Server/Network Appliance IPv6 profile (R)	Partially Met[5]	5.3.5
ISDN PRI T1	No[1]	Yes	The VTC system/endpoints shall meet the requirements of FTR 1080B-2002. (R)	Met[3]	5.2.4.2
			A loss of any conferee on a multipoint videoconference shall not terminate or degrade the DSN service supporting VTC connections of any of the other conferees on the videoconference. (R)	Met	5.2.4.2
			Audio add-on interface, implemented independently of an IAS, shall be in accordance with the UCR, Section 5.2.3. (C)	Met	5.2.4.2
			Integrated PRI interface shall be in conformance with IAS requirements in the UCR, Section 5.2.6. (C)	Met	5.2.4.2
			Physical, electrical, and software characteristics shall not degrade or impair switch and associated network operations. (R)	Met	5.2.4.2
Security	Yes	Yes	GR-815 and STIGs (R)	Met[6]	4.3.1 and 5.4.6.1

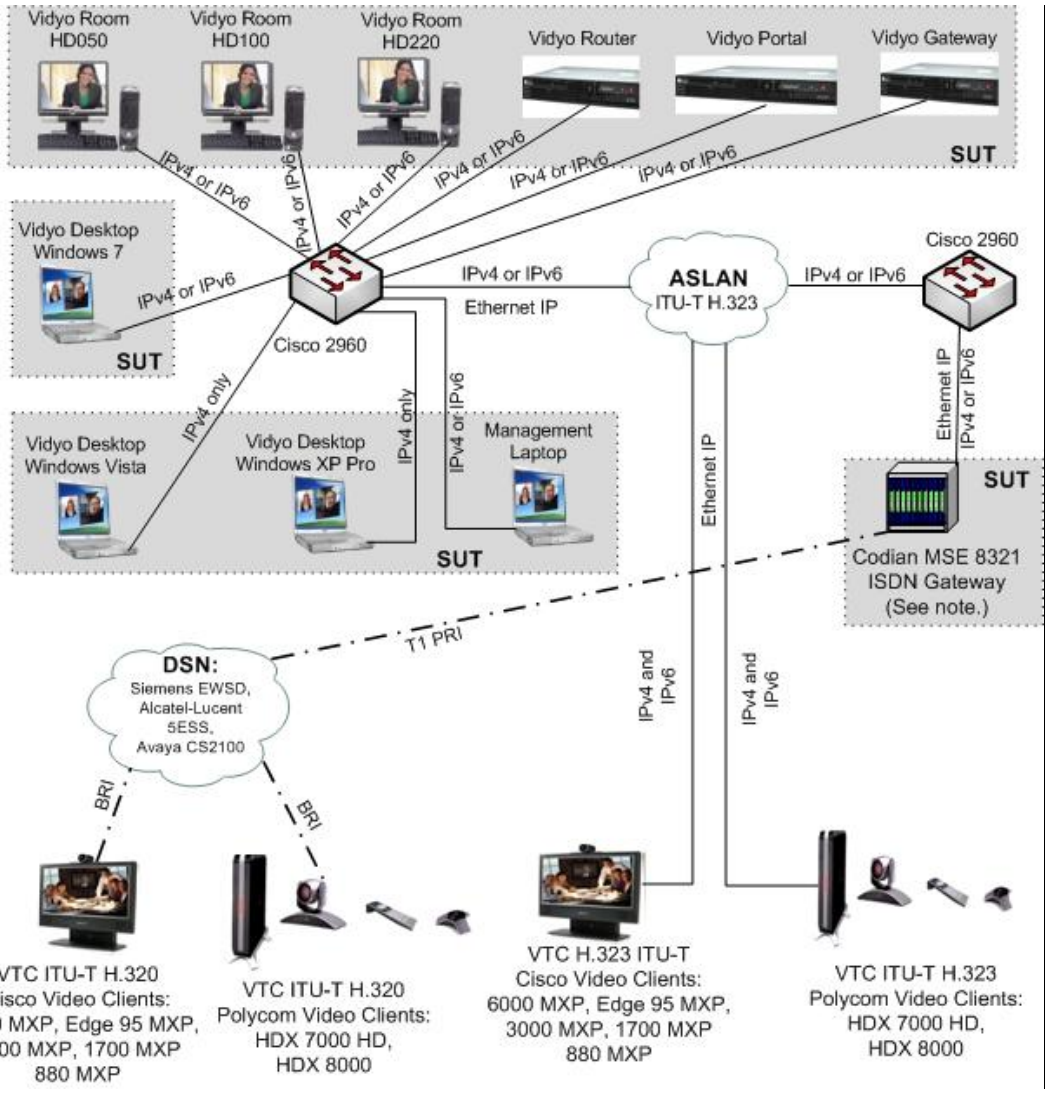
NOTES:
1. The SUT is IP only and requires the use of an ITU-T H.323 to ITU-T H.320 gateway solution as a required subcomponent in order to connect to the DISN. In testing, JITC has found minimal risk in certifying this with any ITU-T H.323 to ITU-T H.320 gateways certified and on the UC APL as a component to other certified VTC systems.
2. The SUT met the conditional requirements for an IP interface with the ITU-T H.323 protocol; however, Assured Service is not yet defined for an IP interface with ITU-T H.323 protocol. Therefore, C2 VTC users and Special C2 VTC users are not authorized to be served by an IP interface with the ITU-T H.323 protocol.
3. All requirements are derived from UCR 2008, Change 1, Reference (c). The SUT does not support a sub-requirement inside FTR-1080B-2002. This sub-requirement was changed to conditional in UCR 2008, Change 3, Reference (e). DISA stated that effective immediately, this is no longer applicable to the SUT.
4. The SUT does not support DSCP tagging for IPv4 to IPv6 traffic. All traffic is tagged at 0 (Best Effort). DISA adjudicated this discrepancy as minor with the vendor's POA&M to fix with release 2.1.2D by 13 August 2012. Additionally, DISA stipulated that this discrepancy must be fixed and verified by the POA&M date or it will be pulled off the UC APL.
5. The SUT does not support Dual Stack IPv6. The SUT can be configured for IPv4 or IPv6. DISA adjudicated this discrepancy as minor with the vendor's POA&M to fix with release 2.1.2D by 13 August 2012.
6. Security is tested by DISA-led Information Assurance test teams and published in a separate report, Reference (f).

Table 2-1. SUT FRs and Interoperability Status (continued)

LEGEND:

APL	Approved Products List	IPv4	Internet Protocol version 4
C	Conditional	IPv6	Internet Protocol version 6
C2	Command and Control	ISDN	Integrated Services Digital Network
DISA	Defense Information Systems Agency	ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
DISN	Defense Information System Network		
DSCP	Differentiated Services Code Point	JITC	Joint Interoperability Test Command
DSN	Defense Switched Network	Mbps	Megabits per seconds
FRs	Functional Requirements	PRI	Primary Rate Interface
FTR	Federal Telecommunications Recommendation	POA&M	Plan of Action and Milestones
		R	Required
GR	Generic Requirement	STIGs	Security Technical Implementation Guides
GR-815	Generic Requirements For Network Element/Network System (NE/NS) Security	SUT	System Under Test
		T1	Digital Transmission Link Level 1 (1.544 Mbps)
H.320	Standard for narrowband VTC	UC	Unified Capabilities
H.323	Standard for multi-media communications on packet-based networks	UCR	Unified Capabilities Requirements
		VTC	Video Teleconferencing
IAS	Integrated Access Switch		
IP	Internet Protocol		

8. TEST NETWORK DESCRIPTION. The SUT was tested at JITC's Global Information Grid Network Test Facility (GNTF) in a manner and configuration similar to that of the DISN operational environment. Testing the system's required functions and features was conducted using the test configuration depicted in Figure 2-2 which depicts the SUT test configuration.



NOTE: The SUT is IP only and requires the use of an ITU-T H.323 to ITU-T H.320 gateway solution as a required subcomponent in order to connect to the DISN. In testing, JITC found minimal risk in certifying this with any ITU-T H.323 to ITU-T H.320 gateways that are certified and on the UC APL as a component to other certified VTC systems.

LEGEND:

5ESS	Class 5 Electronic Switching System
APL	Approved Products List
ASLAN	Assured Services Local Area Network
BRI	Basic Rate Interface
CS	Communication Server
DISN	Defense Information System Network
EWSD	Elektronisches Wählsystem Digital
GW	Gateway
H.320	Standard for narrowband VTC
H.323	Standard for multi-media communications on packet-based networks
HD	High Definition
IP	Internet Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
ISDN	Integrated Services Digital Network
ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
Mbps	Megabits per second
MSE	Media Service Engine
PRI	Primary Rate Interface
SUT	System Under Test
T1	Digital Transmission Link Level 1 (1.544 Mbps)
UC	Unified Capabilities
VTC	Video Teleconferencing Unit

Figure 2-2. SUT Test Configuration

9. SYSTEM CONFIGURATIONS. Table 2-2 provides the system configurations, hardware, and software components tested with the SUT. The SUT was tested in an operationally realistic environment to determine interoperability with a complement of DISN switches noted in Table 2-2. Table 2-2 lists the DISN switches which depict the tested configuration and is not intended to identify the only switches that are certified with the SUT. The SUT is certified with switching systems listed on the UC APL that offer the same certified interfaces.

Table 2-2. Tested System Configurations

System Name	Software Release
Siemens EWSD	19d with Patch Set 46
Avaya CS2100	Succession Enterprise (SE)09.1
Alcatel-Lucent 5ESS	5E16.2, BWM 10-0001
Cisco (formerly Tandberg) 6000 MXP, Edge 95 MXP	F9.0.2 NTSC
Cisco (formerly Tandberg) 3000 MXP	F7.3.1 NTSC
Cisco (formerly Tandberg) 1700 MXP	F7.3.1 PAL
Cisco (formerly Tandberg) 880 MXP	F2.3 NTSC
Polycom HDX 7000 HD Rev C, HDX 8000	Release 2.7.0_J
Cisco 2960 Switch	IOS 1.1(13)EA1
System Under Test	
Vidyo Room Systems: HD050, HD100, HD220	2.1.0.319_D
Vidyo Desktop Software (on a site-provided, STIG-compliant workstation running Microsoft Windows XP, Vista, or Windows 7)	2.1.0.332_D
Vidyo Portal	2.1.1.11_D
Vidyo Router	2.1.1.11_D
Vidyo Gateway	2.1.1.10_D
Codian MSE 8321 ISDN Gateway	2.1(1.43)P
Management Workstation (on a site-provided, STIG-compliant workstation running Microsoft Windows XP, Vista, or Windows 7)	VidyoDesktop v2.1.00.332D

LEGEND:

5ESS	Class 5 Electronic Switching System	ISDN	Integrated Services Digital Network
BWM	Broadcast Warning Message	MSE	Media Service Engine
CS	Communication Server	MXP	Media XPerience
EWSD	Elektronisches Wählsystem Digital	NTSC	National Television Standards Committee
HD	High Definition	PAL	Phase Alternate Line
HDX	High Definition Experience	Rev	Revision
IAS	Intergrated Access Switch	STIG	Security Technical Implementation Guide
IOS	Internetwork Operating System		

10. TEST LIMITATIONS. None.

11. TEST RESULTS

a. Discussion. The VTC system interface requirements can be met with an ITU-T H.323 interface or ISDN PRI with the use of a ITU-T H.323 to ITU-T H.320 Gateway. Although each interface is conditional, if the SUT offers an interface, it must meet the critical requirements for that interface. The SUT minimum critical interoperability interface and functional requirements were met through both interoperability certification testing and review of the vendor's LoC. A passed test result was based on 100 percent of the calls receiving a score of four or better on the subjective quality scale as defined in Table 2-3. Furthermore, the SUT has the capability of connecting multiple sites at

different bandwidth rates. None of the conferences that are connected to the SUT were reduced in video quality due to one conferee being at a lower restricted bandwidth.

Table 2-3. Video and Voice Subjective Quality Scale

Rating	Reference	Definition
1	*Unusable*	Quality is unusable. Voice and video may be heard and seen but is unrecognizable.
2	*Poor*	Quality is unusable. Words and phrases are not fully understandable or video cannot be properly identified.
3	*Fair*	Quality is seriously affected by distortion. Repeating words and phrases are required to convey speech or video is seriously impacted and barely recognizable.
4	***Good***	**Quality is usable. Audio or video is not impaired but some distortion is noticeable**
5	*Excellent*	Quality is unaffected. No discernable problems with either audio or video.
NOTE: Audio and video quality during a conference will receive a subjective rating on the Data Collection Form. A rating of lower than 4 on this reference scale is considered a failure.		

b. Test Conduct. Multiple two-way 128 – 768 kilobits per second (kbps) multipoint and Point-to-Point test calls at different durations (15-minutes, 30-minutes, 1-hour, and 24-hours) were placed over the test network shown in Figure 2-2 via all the combinations depicted in Table 2-1.

(1) The UCR, Section 5.2.4.2 requirements state that the VTC system/endpoints shall meet the requirements of Federal Telecommunications Recommendation (FTR) 1080B-2002. All requirements are derived from UCR 2008, Change 1, Reference (c). The SUT does not support a sub-requirement inside FTR-1080B-2002. This sub-requirement was changed to conditional in UCR 2008, Change 3, Reference (e). DISA stated that effective immediately, this is no longer applicable to the SUT. The SUT met the applicable FTR-1080B-2002 requirements through testing and the vendor's LoC.

(2) The UCR, Section 5.2.4.2 requirements state that a VTC features and functions used in conjunction with IP network services shall meet the requirements of ITU-T H.323 in accordance with FTR 1080B-2002. This requirement was met by the SUT with testing and the vendors LoC. Additionally, ITU-T H.323 video end instruments must meet the tagging requirements as specified in UCR 2008, paragraph 5.2.12.8.2.9. This requirement was not met by the SUT with testing and the vendors LoC. The SUT has the ability to apply a Service Class Tag for signaling and video media at any value from 0 to 63 at the management workstation; however, when capturing traffic from and to the SUT with a packet capture utility, all the packets still have a value of 0, which means that the SUT does not meet this requirement. DISA adjudicated this discrepancy as minor with the vendor's POA&M to fix with release 2.1.2D by 13 August 2012. Additionally, DISA stipulated that this discrepancy must be fixed and verified by the POA&M date or it will be pulled off the UC APL.

(3) UCR Section 5.3.5.2, Table 5.3.5-1 states that VTC IP interface must be Internet Protocol version 6 (IPv6) capable. The SUT partially met this requirement because the SUT is IPv6 capable; however, it is not able to perform Internet Protocol

version 4 (IPv4) and IPv6 dual stack functions at this time. DISA adjudicated this discrepancy as minor with the vendor's POA&M to fix with release 2.1.2D by 13 August 2012.

(4) The UCR, Section 5.2.4.2 requirements state that a loss of any conferee on a multipoint videoconference shall not terminate or degrade the Defense Switched Network (DSN) service supporting VTC connections of any of the other conferees on the videoconference. This was tested during each multipoint session established with the SUT by disconnecting single and multiple conferees. This was done by hanging up and simulating a failure by disconnecting the physical interface. The remaining conferees on the multipoint conference were not affected and remained in the conference 100 percent of the time, which met this requirement.

(5) The UCR, Section 5.2.4.2 requirements state that an audio add-on interface, implemented independently of an Integrated Access Switch (IAS), shall be in accordance with the UCR 2008 and in particular, Section 5.2.3, Customer Premise Equipment Requirements. The SUT met this requirement through the vendor's LoC.

(6) The physical, electrical, and software characteristics of VTC system(s)/endpoint(s) that are used in the DISN network shall not degrade or impair the serving DISN switch and its associated network operations. This was tested by conducting other tests on the serving DISN switch while point-to-point and multipoint video sessions were established. The SUT physical, electrical, and software characteristics did not impair the serving DISN switch and its associated operations, which met the requirement.

(7) A VTC system/endpoint that uses an integrated PRI interface to connect to the DISN shall be in conformance with the requirements associated with an IAS as described in the UCR, Section 5.2.6, IAS requirements. The SUT met this requirement through testing and the vendor's LoC.

(8) The UCR, Section 5.4 states the Information Assurance (IA) requirements for the SUT. Security is tested by DISA-led IA test teams and published in a separate report, Reference (f).

c. Test Summary. The SUT met the critical interface and FRs for a VTC system with the interfaces depicted in Table 2-1 and is certified for joint use within the DISN. The SUT met the requirements for an IP interface with the ITU-T H.323 protocol; however, Assured Service is not yet defined for an IP interface with the ITU-T H.323 protocol. Since the IP interface with the ITU-T H.323 protocol does not provide Assured Services during a crisis or contingency, users' access to the DISN will be on a best effort basis. Therefore, Command and Control (C2) VTC users and Special C2 VTC users are not authorized to be served by an IP interface with the ITU-T H.323 protocol.

12. TEST AND ANALYSIS REPORT. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability

information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at https://stp.fhu.disa.mil. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at http://jit.fhu.disa.mil (NIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi. Due to the sensitivity of the information, the Information Assurance Accreditation Package (IAAP) that contains the approved configuration and deployment guide must be requested directly through government civilian or uniformed military personnel from the Unified Capabilities Certification Office (UCCO), e-mail: ucco@disa.mil.